

nally have been of a conical figure, thrice, or thereabouts, longer than that here shown. The skeleton is completely silicified, and what appears to answer to cavities are infiltrated with silica. Both upper and lower surfaces are of a roughened nodular character, though the view here given represents the lower border as plane. Both margins for a short distance inwards are markedly in thin undulating layers; deeper and centrally the layers assume minor ovoid figures, and in many, if not all, are radiating lines or pillars therefrom. These ovoid centres appear to correspond to the exterior nodular elevations (see fig. 10).

- Fig. 10. A limited part of the surface of the preceding *Stromatoporoid* (fig. 9), of nat. size, showing the nodose elevations, and that besides these granular, they bear evidence of stellar tracery in agreement with the oval interior designs.
- Fig. 11. A vertical transparent section of a portion of fig. 9 under an inch objective ($= \times 60$ diam.). It is difficult to interpret the microscopic appearances here presented other than by supposing the larger dark areas as openings or expansions of an intricate system of tubulation. In other portions of the slide, but not here shown, there were indications of a network comparable with that of some of the Lithistid sponges.
- Fig. 12. The exterior surface of one of the layers of a fragment of the fossil *Pölyzoon Eschara nobilis*, Michelin, $\times 2$ diam.
- Fig. 13. A vertical section through a series of the layers of the same specimen of *E. nobilis*, also $\times 2$ diam. These figures are introduced for comparison with the structure of *Stromatopora*, &c.; the vertical section displays a great general resemblance to similar sections of *Stromatopora*, inasmuch as horizontal layers and vertical pillars are present.

Description of New Species and Genera of *Eumolpidae*.

By JOSEPH S. BALY, Esq., M.R.C.S., F.L.S.

[Read December 20, 1877.]

List of Genera, Species, and their Habitat.

<i>Aoria Mouhoti</i>	Cambodia.
<i>Eubraxis</i> (n. g.) <i>spinipes</i>	Cameroons. †
„ <i>indica</i>	Northern India.
<i>Leprotos fulva</i>	Tartary.
„ <i>Lewisii</i>	China, Japan.
<i>Salodonta Simoni</i>	Australia.
<i>Parascela</i> (n. g.)	
<i>Cheiridea</i> (n. g.) <i>Chapuisi</i>	Sierra Leone.
<i>Colasposoma sellatum</i>	Western Australia.
<i>Ocnus pallidus</i>	„ „

<i>Pachnephorus torridus</i>	.....	Banks of the Niger.
„	<i>Brettinghami</i>	..... India.
„	<i>Lewisi</i>	..... China.
„	<i>porosa</i> „
<i>Eurydemus Jansonii</i>	.....	Guinea.
<i>Bedelia persica</i>	.....	Persia.
<i>Pseudocolaspis longicollis</i>	.....	Southern India.
„	<i>Lefevrei</i>	..... Arabia.
„	<i>femorata</i>	..... South Africa.
<i>Mouhotia</i> (n. g.) <i>femorata</i>	.....	Siam.
<i>Syagrus rugifrons</i>	.....	South Africa.
<i>Jansonius</i> (n. g.) <i>alternatus</i>	..	Chili.

Genus AORIA, *Baly*.

AORIA MOUHOTI, n. sp. Breviter ovata, valde convexa, pallide piceo-fulva, subtus nitida; supra subopaca, fulvo-sericea; antennæ extrorsum pedibusque nigris; thorace subgloboso, granuloso, fortiter subcrebre punctato; elytris thorace latioribus, e basi ad apicem attenuatis, convexis, infra basin leviter transversim depressis, humeris sat prominentibus, tenuiter sed distincte punctatis, interspatiis leviter ruguloso-granulosis. Long. $1\frac{1}{4}$ lin.

Hab. Cambodia, mountains of Laos, collected by the late M. Mouhot.

Head coarsely punctured, front impressed with a faint longitudinal groove; eyes and jaws black; anterior border of clypeus slightly concave-emarginate; antennæ more than two thirds the length of the body, three lower joints fulvous, the fourth piceous, the rest black, six outer joints slightly compressed. Thorax not longer than broad, subglobose; sides rounded; basal border narrowly margined, the median lobe distinctly produced, obtusely truncate; upper surface granulate, deeply punctured, sparingly clothed with short, erect hairs. Scutellum oblong-quadrate, its apex bisinuate. Elytra much broader than the thorax at the base, attenuated towards the apex, convex, faintly depressed transversely below the basilar space, the humeral callus prominent; finely punctured, interspaces rugose-granulose; on each elytron are a number of pale piceous points arranged in longitudinal rows, and corresponding to the punctate striæ on many other species of *Eumolpidæ*; surface clothed with suberect hairs, much longer than those on the thorax.

This insect, in external form, strongly resembles the smaller species of *Pseudocolaspis*.

Genus *EUBRACHIS*, *Dej. Cat.* (*Pseudocolaspis*, Chap., Fairm.).

Prothoracis episterni antica margine antico concavo aut recto, angulo antero-interno non libero; characteribus cæteris ut in *Pseudocolaspide*.

Type *Eubraxis cylindrica*.

On recently arranging my species of *Pseudocolaspis* I found that the insects were separable into two distinct generic groups: in the one, of which *P. cærulea*, Laporte, must be taken as the type, and which, consequently, must retain Laporte's name, the anterior margin of the prothoracic episternum is more or less convex, its antero-internal angle being free and not continuous with the anterior margin of the prosternum; in the second form, on which Dr. Chapuis has apparently drawn up his characters of *Pseudocolaspis*, the anterior margin of the episternum is straight or slightly concave, and its antero-internal angle is continuous with the outer angle of the prosternum. For this genus I propose to retain the name *Eubraxis*, used for these insects by Chevrolat in the 3rd edition of Dejean's Catalogue. The following short table will show at once the distinction between the two genera:—

Apical margin of anterior episternum convex or angulate, its antero-internal angle free	<i>Pseudocolaspis</i> .
Apical margin of anterior episternum straight or concave, the antero-internal angle continuous with the prosternum	<i>Eubraxis</i> .

EUBRACHIS SPINIPES, n. sp. Oblonga, valde convexa, nitida, subtus nigro-ænea, pedibus late metallico-purpureis cyaneo tinctis; supra obscure cupreo-purpurea cyaneo et viridi-æneo tincta, pube grisea subsquamiformi parvus vestita; antennis piceo-rufis, viridi-æneomicantibus, articulis ultimis quinque nigris; thorace subgloboso, rude rugoso, transversim elevato-strigoso; elytris thoracis basi multo latioribus, obovatis, convexis, infra basin late transversim depressis, callo humerali valde elevato, compresso; parce confuse punctatis, ante medium rude rugosis, pone medium vittis costiformibus interruptis, tuberculisque magnis in series longitudinales dispositis instructis; femoribus subtus spinis validis duabus arcuatis. Long. $2\frac{1}{2}$ lin.

Hab. Guinea, Cameroons.

Head coarsely rugose; vertex covered with irregular longitudinal rugæ. Thorax subglobose, not longer than broad; sides moderately rounded; basal border narrowly margined, sinuate on either side the median lobe, the latter obtusely truncate; upper surface sparingly clothed with suberect griseous hairs, coarsely rugose, covered with irregular transverse elevated strigæ. Scutellum metallic purple, subquadrate, its apical margin bisinuate. Elytra much broader at the base than the thorax, attenuated from the base towards the apex; convex, broadly depressed transversely below the basilar space, the latter slightly thickened; humeral callus strongly elevated, compressed; surface sparingly clothed with erect, white, scale-like hairs, and remotely impressed with small but deep punctures, the anterior half coarsely rugose; the hinder half covered with interrupted costiform vittæ, which on the inner disk are broken up into large strongly raised nodosities. Body beneath and legs clothed with adpressed, white, scale-like hairs.

EUBRACHIS INDICA, n. sp. Elongata, subcylindrica, viridi-ænea, nitida, griseo-pubescens, pedibus nigro-æneis, trochanteribus, labro antennisque rufo-piceis, his extrorsum nigris; clypeo profunde subangulato-emarginatò; thorace transverso, subgloboso, dorso depresso, apice constricto, fortiter sat crebre punctato, utrinque fovea magna impresso; elytris griseo-setosis, oblongis, fere parallelis, convexis, dorso paullo deplanatis, humeris prominentibus; subcrebre fortiter punctatis, punctis substriatim dispositis, singulis setula erecta grisea instructis. Long. $1\frac{1}{2}$ lin.

Hab. Northern India; Masuri (7000 feet above sea-level).

Head coarsely punctured, vertex swollen; front with an ill-defined longitudinal groove; anterior margin of clypeus deeply notched, the notch subangulate, its apex rounded; antennæ scarcely longer than the thorax, six lower joints rufo-piceous, more or less stained with black, five outer ones thickened, entirely black, apex of terminal joint acute. Thorax about a third broader than long; sides rounded, basal margin obsoletely sinuate on either side the median lobe, the latter obtusely truncate; upper surface subglobose, flattened on the disk, transversely depressed and constricted at the apex, narrowly margined at the base, surface clothed with adpressed hairs; strongly punctured, base with a faint longitudinal ridge. Scutellum scarcely broader than long, narrowed from base to apex, the apical margin obtuse,

the lateral ones sinuate; surface distinctly but not closely punctured. Elytra scarcely broader than the thorax, broadly oblong, sides nearly parallel, scarcely converging towards the apex; above convex, flattened along the suture; each elytron indistinctly excavated on the middle disk below the basilar space, the humeral callus prominent, compressed; rather strongly punctured, the punctures arranged in ill-defined longitudinal striæ; surface clothed with a number of erect, rigid, griseous hairs, each springing from a single puncture and forming longitudinal rows.

Genus *LEPROTES*, *Baly*.

LEPROTES FULVA, n. sp. Elongata, subcylindrica, subtus picea, griseo-pilosa, pedibus sordide fulvis, femoribus apice tarsisque piceis; supra piceo-fulva, pube subsquamiformi concolori dense vestita; antennis nigris, basi piceis; thorace vix latiore quam longiore, lateribus rotundatis, antice breviter constrictis, subcylindrico, rugoso-punctato; elytris oblongis, parallelis, convexis, infra basin breviter transversim excavatis, fortiter substriatim punctatis. Long. 3 lin.

Hab. Mahlu San, coast of Tartary.

Whole body above densely clothed with linear, adpressed, scale-like hairs. Head coarsely punctured, front impressed with a longitudinal groove; clypeus not separated from the upper face, nearly glabrous, very slightly oblique, its anterior border very faintly sinuate; face above the clypeus concave; antennæ four fifths the length of the body, slender, filiform, the three or four lower joints pale piceous, more or less stained with nigro-piceous; basal joint thickened, subclavate, slightly curved; the second moderately thickened, two thirds the length of the first; the third slender, filiform, rather longer than the fourth. Thorax subcylindrical, slightly constricted at the apex, coarsely rugose-punctate. Scutellum wedge-shaped, its apex obtusely truncate, its surface rugose. Elytra broader than the thorax, parallel, subacutely rounded at the apex; above convex, faintly depressed below the basilar space, the latter very slightly thickened; strongly punctured, the punctures rather fainter towards the apex, arranged in irregular longitudinal rows; interspaces below the basilar space rugulose; on each elytron are several ill-defined, slightly raised, longitudinal vittæ. Legs slender, elongate.

LEPROTES LEWISI, n. sp. Elongata, subcylindrica, picco-nigra aut nigra, squamulis albidis lineariformibus sat dense vestita; antennis pallide rufo-piceis, extrorsum piceis; thorace vix longiore quam latiore, lateribus fere rectis, apice paulo convergentibus, subcylindrico, disco antice breviter excavato, rude rugoso-punctato; elytris oblongis, parallelis, convexis, infra basin distincte excavatis, spatio basilari distincte elevato, profunde substriatim punctatis (interspatiis rugulosis), utrinque vittis subelevatis nonnullis instructis; pedibus elongatis. Long. $3\frac{1}{2}$ lin.

Hab. China, Japan (collected in both localities by Mr. G. Lewis).

Whole body clothed with narrow, adpressed, acute, white scales. Head coarsely rugose-punctate, vertex and front impressed on the mesial line with a longitudinal groove; face above the clypeus concave; clypeus and labrum piceous, the former oblique, glabrous, its anterior margin angulate-marginate; antennæ more than three fourths the length of the body, slender, filiform, fulvo-piceous, the outer joints stained with piceous; first and second equal in length, the latter only slightly thickened, the third nearly one half longer than the second, equal in length to the fourth. Thorax scarcely longer than broad; sides nearly straight and parallel, only slightly converging at the apex; above subcylindrical, coarsely rugose-punctate; central portion of the middle disk obsoletely gibbous. Scutellum wedge-shaped, nearly twice as broad as long, its apex obtuse, the lower half of its surface rugose. Elytra broader than the thorax, parallel, subacutely rounded at the apex; convex, excavated below the basilar space, the latter distinctly thickened; coarsely and deeply punctured, the punctures arranged in ill-defined longitudinal rows, the puncturing rather finer towards the apex; interspaces shining, irregularly wrinkled; on each elytron are three or four slightly raised but distinct vittæ. Legs slender, elongate.

Genus *SCELODONTA*, *Westwood*.

SCELODONTA SIMONI, n. sp. Oblonga, convexa, cuprea, nitida, sat dense albido pubescens; antennis extrorsum nigris; thorace pube adpressa vestito impresso-strigoso, strigis distincte punctatis; elytris thorace multo latoribus, a basi ad apicem paulo attenuatis, convexis, infra basin leviter excavatis, humeris prominentibus; seriatim punctatis, pilis subsquamiformibus gracilibus suberectis in strias longitudinales dispositis vestitis. Long. 2 lin.

Hab. Australia, Rockhampton.

Head deeply punctured, granulose, sparingly clothed with coarse, adpressed, white hairs; lower portion of front impressed with a longitudinal groove; clypeus one half longer than broad, its apex separated from the face by an angular groove; anterior margin subangulate-emarginate, the angles of the notch each produced into an obtuse tooth; jaws nigro-piceous; antennæ slightly longer than the thorax, the five outer joints black. Thorax broader than long, sides rounded; basal margin oblique and slightly sinuate on either side; the median lobe sinuate; above convex, covered with sulcate punctured strigæ, transverse at the base, oblique towards the apex, entirely obsolete at the apex itself, where the puncturing becomes confused; basal border broadly margined. Scutellum rather broader than long, pentangular, its surface impressed with a few deep punctures. Elytra much broader at the base than the thorax, slightly attenuated towards the apex; convex, transversely excavated below the basilar space, the latter thickened, the humeral callus prominent; impressed with large but rather shallow punctures, arranged in numerous longitudinal rows; interspaces plane, irregularly wrinkled below the humeral callus and also below the basilar space; surface sparingly clothed with suberect, narrow, scale-like hairs, arranged in ill-defined longitudinal rows, much less numerous than the rows of punctures. Pleuræ densely clothed with adpressed white pubescence. Four hinder thighs each armed with an acute spine.

Scelodonta bidentata, described by me in the Trans. Entom. Soc. of London, p. 43 (April 1877), has been since described by M. Lefèvre in the French 'Annales' for 1877, p. 161, under the name of *Scelodonta egregia*.

Genus PARASCELA, n. gen.

Corpus oblongo-ovatum, valde convexum, pube suberecta vestitum.

Caput exsertum, *facie* perpendiculari; *oculis* prominentibus, integris, apice orbito depresso munitis; *antennis* filiformibus, articulo basali incrassato, secundo et tertio æquilongis, utroque primum longitudine æquantibus. *Thorax* subglobosus, lateribus marginatis. *Elytra* thorace latiora, convexa, confuse punctata. *Pedes* mediocres; *femoribus* modice incrassatis, subampullatis, subtus dente acuto armatis; *tibiis* posticis quatuor extus ante apicem emarginatis; *unguiculis* appendiculatis. *Prosternum* subquadratum, lateribus concavis, apice trun-

cato, disco inter coxas transversim elevato; *episterno* antico, cum angulo antico non libero, margine antico recto.

Type *Parascela cribrata*, Schauf.

The insect on which I have founded the present genus differs from *Pseudocolaspis* (in which group it was placed by Schaufuss) in having appendiculated claws, notched hinder tibiæ, and also in the form of the prothoracic episternum: from *Eubrachis* it differs by the first two characters, and from *Scelodonta* by the absence of the deep frontal grooves and also in the appendiculated claws.

Genus CHEIRIDEA, n. gen.

Corpus subelongatum, convexum, dorso glabrum. *Caput* exsertum, *facie* brevi, perpendiculari; *oculis* prominentibus; *antennis* gracilibus, filiformibus; *clypeo* subangulato-emarginato. *Thorax* latitudini longitudine æquali, subglobosus, subcylindricus, lateribus distincte marginatis, serrulatis. *Scutellum* pentagonum. *Elytra* thorace multo latiora, oblonga, punctato-striata. *Pedes* mediocres, *tibiis* intermediis extus ad apicem emarginatis; *unguiculis* dentatis. *Prosternum* anguste oblongum; *episterno* antico margine apicali recto, angulo antero-interno non libero.

Type *Cheiridea Chapuisi*.

Nearly allied to *Scelodonta*, separated by the absence of the supraorbital grooves and by the serrulate sides of the thorax.

CHEIRIDEA CHAPUISI, n. sp. Subelongata, convexa, nigra, nitida, supra cyaneo vix tincta; pedibus piceis labro, tarsis antennisque pallide piceo-fulvis; thorace subgloboso, crebre foveolato-punctato; elytris convexis, infra basin transversim excavatis et rugulosis, regulariter punctato-striatis, interspatiis elevato-costatis. Long. $1\frac{1}{2}$ lin.

Hab. Sierra Leone.

Head distinctly broader than long, rugose; clypeus not separated from the face, its anterior margin subangulate, emarginate; antennæ slender, rather more than half the length of the body, the three upper joints stained with piceous; basal joint subclavate, curved, thickened gradually towards the apex, the second oblong, rather more than half the length of the first, third to the fifth slender, each equal in length to the first. Thorax not longer than broad; sides rounded, the lateral margin denticulate, all the angles mucronate; upper surface subglobose, closely covered with deep round punctures, interspaces nitidous, minutely granulate. Scutellum longer than broad, pentangular, the lateral angles

nearly obsolete. Elytra much broader than the thorax, broadly oblong, sides parallel, the apex regularly rounded; above convex, transversely excavated below the basilar space, the humeral callus moderately thickened; regularly punctate-striate, the striæ sulcate, the punctures large, deeply impressed, those at the bases of the three or four inner striæ less regularly placed; interspaces strongly costate, the costæ on the transverse depression obsolete and replaced by irregular transverse rugæ.

Genus COLASPOSOMA, *Laporte.*

COLASPOSOMA SELLATUM. Late oblongo-ovatum, convexum, subtus cupreo-æneum, femoribus nigro-æneis, aureo micantibus, tibiis tarsisque nigris æneo vix tinctis; supra igneo-ænea, antennis metallico-purpureis, extrorsum nigris; thorace fortiter suberebre punctato, interstitiis nitidis; elytris rufo-igneis, dorso viridi-metallicis, fortiter confuse punctatis, punctis ad apicem minus fortiter impressis, pone medium prope suturam striatim dispositis, interspatiis lævibus, ad latus transversim elevato-rugosis. Long. 4 lin.

Hab. Western Australia.

Head strongly punctured; vertex on either side above the eye rugose-strigose; front rugose, its mesial line impressed with a longitudinal groove; clypeus rugose-punctate, its apex not separated from the upper face, its anterior border sinuate; labrum piceous, jaws and eyes black, the latter faintly sinuate within, the interocular spaces coarsely punctured: antennæ about half the length of the body, four lower joints obscure metallic purple, the rest slightly thickened, black. Thorax nearly three times as broad as long; sides rounded, converging in front; all the angles mucronate; basal margin slightly oblique on either side, sinuate near the median lobe, the latter slightly produced, very obtusely truncate; upper surface strongly but not closely punctured, the interspaces shining, impunctate; basal border margined, the punctures immediately in front of its median lobe more crowded than on the disk. Scutellum semirovate-ovate, its apex rounded, the side sinuate at the base. Elytra rather broader than the thorax, quadrate-oblong, regularly rounded at the apex; convex, faintly depressed transversely below the basilar space, the humeral callus moderately thickened, strongly but more distantly punctured than the thorax, the punctuation finer towards the apex, the punctures on the inner disk below its middle arranged in irregular longitudinal rows; interspaces smooth and shining, rather distantly

impressed on the inner disk with fine irregular reticulating strigæ; on the outer disk and at the apex the interspaces are thickened and form coarse irregular transverse rugæ. The general colour of the elytra is rufo-igneous; but on their dorsal surface is a common, broad, ill-defined, bright metallic green band, which extends from the base nearly to the apex of the elytra, the punctures on its surface, together with a very narrow sutural line, metallic purple.

Genus *OCNUS*, *Clark*.

OCNUS PALLIDUS, n. sp. *Elongatus, subcylindricus, flavus, nitidus, pube depressa vestitus; capite exserto; antennis robustis, ad apicem angustatis, articulis compressis, ultimis quatuor piceis; thorace vix latiore quam longiore, lateribus fere parallelis, leviter bisinuatis, subcylindrico, leviter ruguloso, fortiter minus remote punctato; elytris glabris, thorace paullo latioribus, parallelis, rude ruguloso-punctatis.* Long. 4 lin.

Hab. Western Australia, Nicol Bay.

Head granulose, vertex rugulose, coarsely but not very closely punctured, sparingly clothed with adpressed white, scale-like, hairs; clypeus not longer than broad, trigonate, its apex depressed, not distinctly separated from the face; the sides rounded, the anterior margin transversely truncate, armed with two very short obtuse teeth; jaws nigro-piceous; antennæ nearly equal to the body in length, robust, attenuated towards the apex, the basal joint strongly thickened, subglobose, the second short, about half the length of the first, slightly thickened, the third to the seventh equal in length, each as long as the first two united, the third to the eleventh moderately compressed; eyes elongate-ovate, sinuate within. Thorax scarcely broader than long; sides nearly parallel, slightly converging from base to apex, slightly bisinuate, the anterior angle excurved; above subcylindrical, sparingly clothed with adpressed scale-like hairs, coarsely but not deeply rugulose-punctate, the middle disk with a broad, shallow, ill-defined longitudinal depression, which extends from the base nearly to the apex. Scutellum semiovate, its apex subacute. Elytra broader than the thorax, subelongate, the sides parallel; above convex, coarsely but not very deeply rugulose-punctate; each elytron with three or four ill-defined vittæ, the one on the middle disk and another below the humeral callus more distinct than the others.

Genus *PACHNEPHORUS*, *Redtenb.*

PACHNEPHORUS TORRIDUS, n. sp. Elongatus, subcylindricus, piceus, nitidus, squamis oblongis bifidis albidis et fuscis dense vestitus, antennis piceo-fulvis; thorace fere æquilongo ac lato, profunde sat crebre punctato, squamis sordide albidis vestito; elytris oblongis, thorace latoribus, convexis, infra basin transverse excavatis, fortiter punctato-striatis, squamis fuscis et albidis variegatis. Long. $1\frac{2}{3}$ lin.

Hab. Banks of the Niger.

Head rotundate, coarsely punctured; vertex convex, closely covered with adpressed, whitish, oblong scales; front impressed with a longitudinal fovea, clothed with much narrower scales than those on the vertex; clypeus elevated, transverse, sparingly clothed with suberect silky hairs; labrum pale rufo-piceous; jaws black, their apices rufo-piceous; antennæ about a third the length of the body, piceo-fulvous. Thorax not longer than broad; sides straight and converging from the base to far beyond the middle, thence rounded and converging to the apex, upper surface convex, closely covered with large round punctures and clothed with dirty white scales. Elytra strongly punctate-striate, clothed with white and fuscous scales longer and narrower than those on the thorax, the white ones forming irregular patches on the surface. Legs and abdomen covered with adpressed linear scales.

PACHNEPHORUS BRETINGHAMI, n. sp. Oblongus, convexus, piceo-niger aut niger, nitidus, squamis adpressis bifidis albidis dense vestitus; antennis pedibusque sordide rufo-piceis; thorace vix latiore quam longiore, sat profunde punctato; elytris thorace latoribus, obovatis, convexis, infra basin excavatis, profunde punctato-striatis, interspatiis nitidis, leviter obsolete rugulosis, ad apicem convexiusculis; humeris prominentibus. Long. $1\frac{1}{3}$ lin.

Hab. India. Collected by Mr. Bretingham.

Head strongly punctured, excavated between the eyes; clypeus transverse, thickened at the base; antennæ more than a third the length of the body, five of the joints stained with fuscous. Thorax scarcely broader than long; sides straight and diverging from the base to far beyond the middle, thence rather abruptly rounded and converging to the apex; above subcylindrical, convex on the disk, deeply punctured, clothed with deeply bifid, narrowly oblong, adpressed scales. Elytra broader than the thorax, obovate, convex, each elytron deeply excavated below the basilar space, deeply and coarsely punctate-striate, the puncturing rather finer towards the apex; surface clothed with similar scales to those on the thorax;

here and there they are more densely congregated, and form ill-defined patches.

PACHNEPHORUS LEWISI. Oblongus, convexus, piceo-niger, nitidus, subtus squamis albidis vestitus, supra squamis fuscis et albidis intermixtis depressis variegatus; antennis nigris, basi piceis; thorace paullo latiore quam longiore, profunde punctato; elytris convexis, infra basin excavatis, profunde punctato-striatis, striis infra basin prope suturam confusis et ibi punctis magis fortiter impressis, interspatiis nitidis, ad apicem convexiusculis. Long. $1\frac{1}{2}$ lin.

Hab. China. Collected by Mr. Lewis.

Head closely and deeply punctured; clypeus transverse, thickened at the base; clypeus piceous; antennæ rather longer than the head and thorax, the basal and the five upper joints black, the rest piceous. Thorax rather broader than long; sides diverging from the base to beyond the middle, thence rounded and converging to the apex; upper surface subcylindrical, convex on the disk, deeply punctured, clothed with oblong, bifid, fuscous and white scales, which form irregular patches on the surface. Elytra broadly oblong-ovate, excavated at the base near the suture, and again below the basilar space, deeply punctate-striate, the interspaces nitidous, slightly convex towards the apex and on the outer side; surface clothed with white and fuscous scales similar to those on the thorax, the former arranged in irregular patches; at the base, near the scutellum, the striæ are confused, that portion of the surface being impressed with a number of larger foveolate punctures. Body beneath and legs clothed with narrow whitish scales.

PACHNEPHORUS POROSA, n. sp. Elongatus, subcylindricus, niger, nitidus, squamis adpressis gracillimis bifidis griseis vestitus; pedibus piceis; antennis rufo-fulvis, extrorsum nigris; thorace convexo, profunde punctato; elytris profunde regulariter punctato-striatis, interspatiis nitidis tenuiter punctatis. Long. $1\frac{1}{2}$ lin.

Hab. China.

Head deeply and closely punctured; antennæ scarcely longer than the head and thorax, the five outer joints black, the six basal ones rufo-fulvous; labrum piceous. Thorax not longer than broad; sides diverging from the base to beyond the middle, thence rounded and converging to the apex; above convex, deeply impressed with large round punctures. Elytra broader than the thorax, oblong-ovate, convex, scarcely depressed below the basilar space, coarsely and deeply punctate-striate.

Genus EURYDEMUS, *Chapuis*.

EURYDEMUS JANSONI, n. sp. Oblongo-ovatis, fulvus, nitidus, antennis extrorsum thoracisque maculis duabus oblongis nigris; clytris regulariter fortiter punctato-striatis (interspatiis nitidis), utrinque plaga magna infra basin posita vix fere ad latus extensa nigra ornatis. Long. 2 lin.

Hab. Guinea, Cameroons.

Head nitidous, distinctly but not closely punctured; vertex with a faint longitudinal raised line, which terminates on the lower front in a perpendicular groove; jaws piceous; clypeus longer than broad, subcuneiform, its apex broadly truncate, its anterior margin concave-emarginate; antennæ nearly two thirds the length of the body, filiform, five lower joints fulvous, the rest black; basal joint incrassate, oval; the second oblong, two thirds the length of the first; the third slender, nearly twice as long as the second; eyes large, moderately distant. Thorax about one half broader than long; sides rounded and obliquely diverging from the base nearly to the middle, thence obliquely converging and slightly rounded to the apex, hinder angle mucronate; basal margin truncate on either side, the median lobe slightly produced, truncate; upper surface transversely convex, deflexed on the sides, in front finely and sparingly punctured; median portion of basal margin thickened; placed side by side of the middle disk are two narrowly oblong black patches. Scutellum rather longer than broad, trigonate, its apex obtuse. Elytra broadly oblong, and much broader than the thorax, sides parallel, the apex regularly rounded; above convex; each slightly but distinctly excavated below the basilar space, strongly punctate-striate, the punctures very large on the subbasal depression, smaller and less deeply impressed below the middle; interspaces plane, shining, impunctate; those on the excavated portion of the surface convex; on each elytron is a large black patch which extends from immediately below the basal margin to a short distance below the middle of the disk, and laterally from just within the outer margin to the third stria from the suture. All the thighs armed beneath with a strong acute spine.

This species differs from the typical form of the genus in the rather smaller and more widely separated eyes. This character varies in the two sexes of the same species. In *E. grandis* the eyes are much smaller and more distant from each other in the female

than in the male, from which latter sex Dr. Chapuis has apparently drawn up his diagnosis of the genus.

EURYDEMUS GRANDIS, *Baly, Journal of Entom.* i. p. 287 (*sub Rhyparida*), 1861.—*Eurydemus insignis, Chap. Gen. Col.* x. p. 334.

The insect described by me as *R. grandis* was sent to me as coming from New Caledonia. I have since had reason to suppose this locality to be erroneous, having recently received the species from Australia.

Genus BEDELIA, *Lefèvre.*

BEDELIA PERSICA, n. sp. Subelongata, subcylindrica, nitida, subtus piceo-nigra, pedibus fulvis, supra sparse griseo pubescens, fulva, antennis extrorsum piceis; capite fortiter punctato, vertice nigropiceo; thorace transverso, convexo, late fortiter punctato, lateribus rotundatis, angulis mucronatis; elytris thorace latioribus, parallelis, convexis, fortiter punctato-striatis (interspatiis sat remote sed distincte tenuiter punctatis), utrinque vitta suturali maculaque oblonga a paullo ante ad longe pone medium extensa, interdum cum vitta suturali confluyente, nigris. Long. $2\frac{1}{2}$ lin.

Hab. Persia.

Clypeus not distinctly separated from the upper face, its anterior margin transversely truncate; jaws nigro-piceous; eyes reniform, deeply notched; antennæ rather more than half the length of the body, filiform, the six outer joints pale piceous, second joint thickened towards the apex, equal in length to the third, the latter slender. Thorax twice as broad as long across the middle; the sides rounded, all the angles mucronate; above convex, strongly punctured, rather sparingly clothed with adpressed griseous hairs; placed on the middle disk and extending nearly across from side to side of the thorax, is an irregular black transverse band. Elytra broader than the thorax, parallel, regularly rounded at the apex; convex, more finely and more sparingly pubescent than the head and thorax, strongly punctate-striate; the inner stria bifurcate at the base, the puncturing on its inner ramus irregularly placed; extreme apex of hinder femur piceous; all the femora armed beneath with a short spine.

This insect differs from the typical species in having the upper surface of its body sparingly pubescent.

Genus PSEUDOCOLASPIS, *Laporte, nec Chapuis.*

PSEUDOCOLASPIS LONGICOLLIS, n. sp. Breviter ovata, valde con-

vexa, cupreo-, aut viridi-ænea, nitida, griseo-setosa, tibiis, tarsi antennisque piceis, his extrorsum nigro-piceis; thorace multo longiore quam latiore, basi convexo, hinc ad apicem subconico, profunde punctato; elytris basi thorace multo latoribus, ad apicem attenuatis, convexis, infra basin leviter transversim depressis, humeris valde prominentibus, setulis suberectis griseo vestitis; sat fortiter substriatim punctatis, interstitiis infra basin rugulosis; clypeo leviter concavo-emarginato. Long. $1\frac{1}{2}$ -2 lin.

Hab. Southern India.

Head coarsely punctured, vertex rugulose-strigose; front impressed with a longitudinal groove; anterior margin of clypeus concave; antennæ equal to the thorax in length, six lower joints pale rufo-piceous, the five outer ones pitchy black, these latter thickened and forming an elongate club, the seventh joint is obconic and slightly compressed, the eighth to the tenth are turbinate, and the eleventh ovate with its apex obtuse. Thorax one fourth longer than broad; sides rounded and diverging at the extreme base, thence obliquely converging to the apex; basal margin sinuate on either side, median lobe obtusely truncate; upper surface convex at the base, thence subconic to the apex, clothed with adpressed griseous hairs, deeply impressed with large round punctures. Scutellum not longer than broad, pentangular, its surface coarsely punctured, the apical margin impunctate. Elytra much broader than the thorax at the base, narrowed from base to apex, the latter regularly rounded; above convex, transversely excavated below the basilar space, the humeral callus strongly elevated, compressed; surface clothed with stout, suberect, griseous hairs, rather strongly punctured, the puncturing finer towards the apex, arranged in ill-defined longitudinal rows, interspaces just below the basilar space rugulose. Legs cupreo-æneous, tibiæ and tarsi piceous, the claws nigro-piceous, thighs armed beneath with a stout spine.

PSEUDOCOLASPIS LEFEVREI, n. sp. Breviter ovata, valde convexa, nigro-picea, subopaca, squamulis adpressis griseis dense vestita; antennis rufo-piceis, extrorsum nigris; thorace paullo longiore quam latiore, subgloboso, antice subconico, profunde punctato; elytris thorace latoribus, a basi ad apicem attenuatis, convexis, infra basin transversim depressis, humeris valde prominentibus sat profunde; crebre punctatis; disco exteriori (margine laterali excepto) rufo-piceo.

Hab. Arabia, Persia.

Body above clothed with adpressed griseous scales. Head

coarsely punctured; anterior margin of clypeus concave-emarginate, its extreme edge, together with the labrum, obscure piceous; antennæ scarcely longer than the thorax, six lower joints rufo-piceous, the five outer ones black, thickened and forming an elongated club. Thorax longer than broad, subglobose, subconic towards the apex, the basal margin sinuate on either side, the median lobe broadly truncate; upper surface closely covered with large, round, deeply impressed punctures, clothed with adpressed griseous scales; on either side of the disk is a broad, longitudinal, glabrous space. Scutellum scarcely broader than long, pentangular, densely clothed with griseous scales. Elytra much broader than the thorax at the base, attenuated towards the apex; convex, transversely depressed below the basilar space, the humeral callus strongly thickened; surface closely but rather less coarsely punctured than the thorax, interspaces just below the scutellum elevate-reticulate. All the femora armed beneath with a stout spine; tibiæ more or less stained with obscure piceous. Anterior episternum with its anterior border convex, and its antero-internal angle free.

PSEUDOCOLASPIS FEMORATA, n. sp. Breviter ovata, valde convexa, viridi-ænea, aureo tincta, subtus griseo-pilosa, supra fere glabra; femoribus cupreo-aureis, tibiis tarsisque rufo-piceis; antennis nigris, basi rufo-piceis; capite granuloso, fortiter punctato, clypeo subangulato-emarginato; thorace fere æquilato ac longo, globoso, antice attenuato, granuloso, sat profunde et sat crebre punctato, punctis oblongis; elytris basi thorace multo latioribus, hinc ad apicem attenuatis, convexis, humeris valde elevatis, crebre et fortiter substriatim punctatis, interstitiis sparse argenteo-squamulosis, elevato-rugulosis, granulosis. Long. $1\frac{2}{3}$ lin.

Hab. South Africa.

Head coarsely and deeply punctured, the puncturing less crowded on the clypeus, the anterior margin of the latter subangulate-emarginate, the angles acute; antennæ slightly longer than the thorax, the six lower joints piceous, the five outer ones black. Thorax not longer than broad, subglobose, narrowed towards the apex, basal margin with the median lobe slightly produced, transversely truncate; surface closely covered with large, deeply impressed, oblong punctures; interspaces granulose, basal lobe transversely strigulose. Scutellum subquadrate, its apical margin bisinuate. Elytra much broader at the base than the thorax, attenuated from the base to the apex, the latter truncate; above

convex, transversely excavated below the basilar space, the humeral callus thickened, strongly elevated; sparingly clothed with short, suberect, silvery-white scales; coarsely and deeply punctured, the punctures indistinctly arranged in longitudinal striæ; interspaces rugose-granulose. Thighs cupreo-æneous, the intermediate pair less thickened than the others. Anterior episternum with its antero-internal angle free, the anterior margin convex.

Genus *MOUHOTIA*, n. gen.

Corpus breviter ovatum, valde convexum, supra glabrum. *Caput* in thoracem penitus immersum, perpendiculare; *oculis* anguste ovalibus, intus sinuatis, vix prominulis; *clypeo* a facie distincte separato, antice concavo-emarginato; *antennis* quam corporis dimidium longioribus, articulis basalibus quatuor cylindricis, cæteris compressis, leviter dilatatis. *Thorax* transversus, lateribus marginatis, a basi ad apicem convergentibus. *Scutellum* semiovatum. *Elytra* thorace multo latiora, subquadrato-ovata, valde convexa, regulariter punctato-striata, humeris prominentibus. *Pedes* robusti; *femoribus*, præsertim anticis, incrassatis, anticis et posticis spina brevi subtus armatis, intermediis muticis; *tibiis* posticis quatuor extus ante apicem emarginatis; *unguiculis* acute appendiculatis. *Prosternum* transversum, subquadratum, apice obtuse truncatum; *episterni antico* angulo antero-interno libero, margine antico convexo. *Mesosternum* breve, transversum.

Type *Mouhotia femorata*.

The transverse prosternum, the appendiculated claws, and the emargination of the four hinder tibiæ, combined with the general form, will at once distinguish this genus from *Typophorus* and its allies.

MOUHOTIA FEMORATA, n. sp. Breviter ovata, valde convexa, subgibbosa, nitida; capite, thorace pedibusque nigris; pectore piceo; labro, pleuris, abdomine elytrisque rufis; his infra basin vix transversim depressis, regulariter punctato-striatis, interstitiis planis; thorace parce punctato. Long. 2 lin.

Hab. Cambodia, collected by the late Mr. Mouhot.

Head scarcely longer than broad, nitidous, impressed with a few deep punctures, front impressed in the middle with a narrow elongate fovea; upper orbit of eye narrowly excavated; interocular spaces separated from the front by an oblique row of punctures; clypeus much longer than broad, campanulate, distinctly separated from the face, its anterior margin concave-emarginate, either angle of the notch produced into an obtuse tooth; surface

strongly punctured; antennæ with the four lower joints slender, subcylindrical, piceous, the rest thickened and compressed, black. Thorax twice as broad at the base as long; sides obliquely rounded and converging from base to apex, the hinder angles mucronate; basal margin sinuate on either side, the median lobe very slightly produced, thickened, very obtusely rounded; upper surface transversely convex, subcylindrical at the apex, remotely impressed with large deep punctures, interspaces shining, impunctate; apical margin with a broad thickened edge. Scutellum shining, impunctate. Elytra much broader than the thorax, about one half longer than wide, subquadrate-ovate, very broadly rounded at the apex; very convex, faintly excavated below the basilar space, the humeral callus prominent; regularly punctate-striate, the puncturing much finer towards the apex, nearly obsolete on the basilar space; interspaces plane, shining, impunctate. All the thighs (more especially the anterior pair) thickened, ampullate, armed beneath with a short tooth, the intermediate pair unarmed.

GENUS SYAGRUS, *Chapuis*.

SYAGRUS RUGIFRONS, n. sp. Elongatus, subcylindricus, obscure cupreus, nitidus, scutello, capite pedibusque piceis, antennis obscure piceo-fulvis; capite rude rugoso; thorace vix latiore quam longiore, lateribus fere parallelis, subcylindrico, crebre foveolato-punctato; elytris thorace latoribus, oblongis, fortiter punctato-striatis, interspatiis costatis. Long. 3 lin.

Hab. South Africa.

Head very coarsely rugose-punctate; front impressed on the mesial line with a faint longitudinal groove; anterior border of clypeus angulate-emarginate; jaws black; antennæ slender, the basal joint broadly ovate, the second nearly equal in length to the first, moderately thickened, ovate, the third to the fifth nearly equal in length, each twice as long as the second. Thorax scarcely broader than long; sides nearly straight and parallel, converging at the apex; above subcylindrical, closely covered with large round punctures. Scutellum scarcely broader than long at the base, semirotundate, its apex acute. Elytra much broader than the thorax, oblong, the sides parallel, the apex rounded; above convex, not excavated below the basilar space, strongly and regularly punctate-striate, the ninth and tenth striae from the suture abbreviated anteriorly below the humeral callus; interspaces convex on the anterior half of the inner disk, costate

on the hinder half, and on the whole of the outer disk, nitidous, sparingly impressed with a few minute punctures. Prosternum constricted anteriorly, its hinder half abruptly dilated. All the thighs armed beneath with a short tooth.

Genus JANSONIUS, n. gen.

Corpus anguste ovatum, convexum, squamulis adpressis brevibus vestitum. *Caput* modice exsertum, *facie* brevi, perpendiculari; oculis subrotundatis, intus leviter sinuatis; *antennis* corporis dimidio fere æquilongis, articulis ultimis quinque incrassatis. *Thorax* transversus, convexus. *Scutellum* semiovatum. *Elytra* thorace latiora, punctato-striata. *Pedes* modice robusti; *femoribus* posticis subtus spina acuta armatis; *tibiis* posticis quatuor extus ante apicem emarginatis; *unguiculis* appendiculatis. *Prosternum* planum, basi et apice ampliatum, lateribus subprofunde sinuatis; *episterno* antico margine apicali leviter convexo, angulo externo vix ad thoracis angulum anticum producto, angulo antero-interno libero.

Type *Jansonius alternatus*.

Nearly allied to *Pachnephorus*, separated from that genus by the more ovate form, the entirely different shape of the thorax, and by the much less convex and less produced anterior border of the prothoracic episternum.

JANSONIUS ALTERNATUS, n. sp. Ovatus, convexus, cupreus, nitidus; antennis nigris, his basi, femoribus basi, tibiis apice tarsisque piceo-rufis; thorace lateribus subangulatis, disco distincte punctato, punctis hic illic irregulariter congregatis; elytris thorace latioribus, convexis, pone medium squamulis brevissimis suberectis albidis parce vestitis, distincte (ad basin fortius) punctato-striatis, striis per paria approximantibus, interspatiis minute granulosis, alternis latioribus nitidis. Long. $1\frac{1}{2}$ lin.

Hab. Chili.

Head granulose, rather closely punctured, clothed with adpressed, white, scale-like hairs; upper portion of front impressed with a deep fovea; labrum and jaws piceous; four lower joints of antennæ pale rufo-piceous, the basal one stained above with piceous, seven outer joints black, the five upper ones distinctly thickened. Thorax broader than long; sides moderately rounded, very obtusely angled in the middle; upper surface convex, very minutely granulose, impressed with round shallow punctures, which are crowded into large irregular patches on the surface. Scutellum pentagonal, its apex acute. Elytra much broader than the thorax, broadly oblong-ovate, convex, each elytron with a shallow exca-

vated space behind the basilar space; each impressed with eleven longitudinal rows of distinct punctures, more deeply impressed at the base, more especially the rows near the suture; the first shorter, the others approximating, but not very closely, in pairs, the space between each double row granulose and finely punctured, the broader spaces between the pairs nitidous and finely granulose.

Observations on Ants, Bees, and Wasps.—Part V. Ants. By Sir JOHN LUBBOCK, Bart., M.P., F.R.S., F.L.S., D.C.L., Vice-Chancellor of the University of London.

[Read February 7, 1878.]

ANTS.

Recollection of Friends.

IN my last paper I recorded some experiments made on a nest of *Formica fusca* which I had divided into two parts. I found that while a stranger introduced into the nest was attacked, driven out, or even killed; and while strangers so introduced showed every sign of fear and an unmistakable desire to escape, friends, on the other hand, put back among their old companions, even after months of separation, were amicably received, and made themselves quite at home. Since my last paper I have continued the observations, as follows:—

The nest was divided on the 4th Aug. 1875.

Feb. 11, 1877. I put in two friends from the other division at 10 A.M. I looked at 10.15, 10.30, 11, 11.30, 12, 2, 4, and 6 P.M. They were on every occasion quite at home amongst the others.

Feb. 12. Put in three from the other division at 12. They were quite at home. I looked at them at 12.30, 1, 2, 4, and 6. Only for a minute or two at first one appeared to be threatened.

Feb. 13. Put in one friend from the other division. The ant was put in at 9.15 A.M., and visited at 9.30, 10, 11, 12, and 1.

Feb. 15. Do. The ant was put in at 10.15 A.M., and visited at 10.30, 11, 12, 1, 2, 3, and 4.

Feb. 19. Do. The ant was put in at 10 A.M., and visited at 10.15, 10.30, 11, 12, 1, and 2.

Mar. 11. Do. Do. at 9.30 A.M., visited at 10.30, 12.30, 2.30 and 5.30.

Mar. 12. Do. Do. at 10 A.M., visited at 12, 2, and 4.

Mar. 18. Put in two friends at 1 P.M., visited at 2 and 4.